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EXAMINER				
CHU, KIM KWOK				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/563,648

Applicant(s)HENDRIKS, BERNARDUS
HENDRIKUS WILHELMU**Examiner**

Kim-Kwok CHU

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed on 8/8/2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 3-10 is/are allowed.
- 6) ☒ Claim(s) 11-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Response to Remarks

1. Applicant's Remarks filed on August 8, 2003 (paper 10) have been fully considered. The amended Claims 1 and 3-10 overcome the prior art rejection. The newly added Claims 11-16 are rejected by the prior art of Kim et al. (U.S. Patent 6,853,614).

Applicant states that the newly added Claims having limitations "wherein the compensator is further configured to compensate for variation of the first parameter without substantially affecting the second wavefront deviation; and wherein the first parameter includes temperature, angle of incidence, polarization and wavelength of the radiation beam" (page 12 of the Remarks, last paragraph). Accordingly, the prior art of Kim reaches compensators 31 and 35 as illustrated in Fig. 2. Each retardation member has its refractive index responsible for its polarized light beams (column 6, lines 16-24). In other words, each compensator is configured to compensate its polarized light beam under the variation of the first parameters such as temperature, wavelength, angle of incidence etc. And furthermore, the changes of the first parameters affects on both compensators 31 and 35 and therefore none of the single compensator affects each other's wavefront deviation as required by the amended Claim 11.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless -
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.*

3. Claims 11-16 are rejected under 35 U.S.C. § 102(e) as being anticipated by Kim et al. (U.S. Patent 6,853,614).

Kim teaches an optical system having all of the elements and means as recited in claims 11-16. For example, Kim teaches the following:

(a) with respect to Claim 11, an arrangement of optical elements (Fig. 5) for interacting with a radiation beam 101a the optical arrangement comprising an optical system and a compensator 130 (Fig. 5), the compensator 130 being configured to generate: a first wavefront deviation (column 5, lines 63-66) introduced by the variation of a first parameter (step pattern and refractive index of 31 to compensate phase of the wavefront) during interaction of the radiation beam 101a (Fig. 5) with the compensator 130, the first wavefront deviation being arranged to counteract a wavefront deviation (aberration correction)

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introduced by the variation of the first parameter during interaction of the radiation beam with the optical system; and a second wavefront deviation introduced by the variation of a second, different, parameter (step pattern and refractive index of 35) during interaction of the radiation beam 101a (Fig. 5) with the compensator 130, the compensator comprising: a first optical element, the first optical 31 element having a phase structure comprising stepped annular areas forming a non-periodic pattern (each annular step is different with each others) of optical paths of different lengths; and a second optical element 35 formed from a different material (different refractive index; column 5, lines 63-66) than the first optical element 31 and having a phase structure comprising stepped annular areas forming a non-periodic pattern of optical paths of different lengths (Fig. 2), the second optical element 35 being arranged to reduce the second wavefront deviation (Fig. 5; aberration correction); wherein the compensator is further configured to compensate for variation of the first parameter (such as phrased compensation) without substantially affecting the second wavefront deviation (Fig. 5; a range of wavefront parameters are compensated); and wherein the first parameter includes temperature, angle of incidence, polarization and wavelength of the radiation beam (Fig. 5; inherent design

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parameters for a diffractive means 31/35).

(b) with respect to Claim 12, materials of the first optical element and the second optical element have different refractive indices and different temperature coefficients of refractive index (Figs. 3 and 5; column 5, last 5 lines, different materials 31 and 35 have different temperature coefficient of refractive index).

(c) with respect to Claim 13, materials of the first optical element and the second optical element have different refractive indices, different thermal expansion coefficients and different temperature coefficients of refractive index (Figs. 3 and 5; column 5, last 5 lines, different materials 31 and 35 have different thermal expansion, different temperature coefficient of refractive index).

(d) with respect to Claim 14, materials of the first optical element and the second optical element have different refractive indices and different polarization coefficients of refractive index (Figs. 3 and 5; column 5, last 5 lines, different materials 31 and 35 have different coefficient of refractive index and therefore have different polarization coefficients of refractive index).

(e) with respect to Claim 15, the first optical element and the second optical element are configured to make the

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optical arrangement both achromatic and athermal simultaneously (elements 31 and 31 do not separate light into colors and are not affected by temperatures).

(f) with respect to Claim 16, the first optical element 31 and the second optical element 35 are configured to make the optical arrangement both achromatic and having reduced field of view dependence simultaneously (Figs. 3 and 5; diffractive steps reduce field of view dependence).

Allowable Subject Matter

4. Claims 1 and 3-10 are allowable over prior art.

5. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claim 1, the prior art of record fails to teach or fairly suggest an optical compensator having the following features:

(a) the annular areas of the first optical element are stepped by a step height of h_j and the annular areas of the second optical element are stepped by a step height of b_j and wherein the first optical element is arranged such that, for each said annular area, the step height h_j is substantially equal to:

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$$h_j = m_j * \lambda / (n_1 - 1)$$

where m_j is an integer, λ the wavelength and n_1 is the refractive index of the material from which the first optical element is made, and

(b) the second optical element is arranged such that, for each said annular area, the step height b_j is substantially

$$b_j = q_j * \lambda / (n_2 - 1)$$

where q_j is an integer, λ the wavelength and n_2 the refractive index of the material of which the second optical element is made.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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7. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen, can be reached on (571) 272-7579.

The fax number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9191 (toll free).

/Kim-Kwok CHU/
Examiner AU2627
December 3, 2008
(571) 272-7585

/HOA T NGUYEN/

Supervisory Patent Examiner, Art Unit 2627